

Application Number 10/693,001
Responsive to Office Action mailed February 20, 2007

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REMARKS

This Response is responsive to the Final Office Action dated February 20, 2007.
Applicant has not amended any claims. Claims 1-9 and 11-29 are pending.

Claim Rejection Under 35 U.S.C. §§ 102 and 103

In the Final Office Action, claims 1-4, 7, 18-20, 23, 25, 27 and 29 were rejected under 35 U.S.C. § 102(b) as being anticipated by Cimochowski et al. (U.S. 5,967,986) or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Cimochowski in view of Tiefengraber (U.S. 5,172,110), in view of Wallerstorfer et al. (U.S. 5,478,995) or in view of Hagfors (U.S. 3,796,221). Claims 9, 11, 12, 15, 18-20, 23, 25, 28 and 29 were rejected under 35 U.S.C. § 102(e) as being anticipated by Pool et al. (U.S. 6,561,975) or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Pool in view of Tiefengraber, in view of Wallerstorfer et al. or in view of Hagfors.

Claims 5, 6, 8, 16, 21, 22, 24 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cimochowski, or, alternatively, over Cimochowski in view of Tiefengraber, Wallerstorfer or Hagfors. Claims 13, 14, 16, 17, 21, 22 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pool, or, alternatively, over Pool in view of Tiefengraber, Wallerstorfer or Hagfors.

Applicant respectfully traverses the rejection of the claims. Cimochowski and Pool, either alone or in combination with Tiefengraber, Wallerstorfer or Hagfors, fail to disclose or suggest each and every feature of the claimed invention, as required by 35 U.S.C. §§ 102(b), 102(e), and 103(a), and provide no teaching that would have suggested the desirability of modification to include such features.

The Office Action states that Applicant's arguments with respect to claims 1-9 and 11-29 regarding the Cimochowski and Pool references have been considered, but are considered moot in view of the new grounds of rejection.¹ This statement implies that the rejections of claims 1-9 and 11-29 under 35 U.S.C. §§ 102(b), 102(e), and 103(a) presented in the previous Office Action mailed on August 23, 2006 have been withdrawn. However, the final Office Action presents the same rejections presented in the August 23, 2006 Office Action. In the event that the Examiner

¹ Final Office Action at page 11, item 8.

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intended to reiterate the rejections presented in the August 23, 2006 Office Action, Applicant traverses the rejections and maintains all previous arguments set forth in the Amendment mailed in response to the Office Action mailed on August 23, 2006.

Cimochowski

In support of the rejection of claims 1-9 and 11-29 under 35 U.S.C. §§ 102(b)/103(a) based on Cimochowski alone or Cimochowski in view of Tiefengraber, Wallerstorfer or Hagfors, the Office Action stated that Cimochowski teaches an antenna with a ring-like structure that defines both a channel and an aperture, reasoning that an aperture is defined as an opening and a hole, gap, or slit, and a channel is defined as a course through which something can be directed or moved.² The Office Action further asserted that the ring-like antenna structure described by Cimochowski is capable of holding a portion of clothing associated with a patient due to the fact that clothing can be placed within the opening, and in turn hold the ring-shaped antenna in a relatively fixed position relative to an implanted medical device.³ In addition, the Office Action stated that because the opening of the coil can be defined as both a channel and an aperture, if the coil of the device were held vertically then rotated about its vertical axis, the channel/aperture of the device would "appear" to be much thinner than the channel/aperture of the coil that is not rotated.⁴

The Office Action suggested that Applicant alter the phraseology of the claims to state that the thinner channel is disposed next to, above, or beneath the wider aperture, or something of the like.⁵ In the Amendment filed on November 22, 2006, Applicant amended independent claims 1, 18, 27 and 29 to recite an antenna for a medical device programmer that defines an aperture with a wide end and a channel disposed adjacent the wide end, wherein the channel is narrower than the wide end. Claims 1, 18, 28, and 29 also state that the channel is formed to hold a portion of an item of clothing associated with a patient and thereby hold the antenna in a substantially fixed position relative to an implantable medical device. Claim 25 was amended to specify that the means for attaching an antenna head to an item of clothing included an aperture

² *Id.* at pages 2-3.

³ *Id.* at page 3.

⁴ *Id.*

⁵ *Id.* at page 4.

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defined by the antenna head, where the aperture includes a wide end and a narrower channel adjacent to the wide end.

The Cimochoowski reference fails to teach each and every feature of Applicant's independent claims 1, 18, 27 and 29. For example, Cimochoowski fails to teach or suggest an antenna that defines an aperture with a wide end and a channel disposed adjacent the wide end. Instead, Cimochoowski describes an antenna comprising an external coil with a ring-like structure such that the antenna defines a wide, open, circular aperture capable of wrapping around relatively large portions of a patient's body.⁶ The Office Action stated that the ring-like structure of the antenna defines both an aperture and a channel. However, Applicant's claims 1, 18, 27 and 29 require an aperture with a wide end and a channel disposed adjacent the wide end of the aperture. Clearly, a ring-like structure that defines a circular aperture cannot define an aperture that includes both a wide end and a channel that is narrower than the wide end disposed adjacent to each other.

Cimochoowski also fails to describe an antenna with a channel that is capable of holding a portion of an item of clothing associated with a patient and thereby holding the antenna in a substantially fixed position relative to an implantable medical device. Cimochoowski fails to even mention attaching the antenna to an item of clothing of the patient. Instead, Cimochoowski describes a stent implanted within an artery within a thigh of a patient that includes an RF antenna, and an external coil antenna that includes a plurality of turns sufficient in diameter to encompass the thigh of a patient.⁷ Cimochoowski further states that the external coil antenna can be made sufficiently large to encompass the portion of the body in which the implanted stent is disposed, such as the torso, another limb of the patient, or the neck of the patient.⁸ Clearly, Cimochoowski describes an antenna having a wide, open aperture capable of wrapping around relatively large portions of a patient's body, and makes no mention of any structure resembling a channel that is formed to hold a portion of clothing of a patient in order to position the antenna relative to an implantable medical device within the patient.

For the same reasons described above with respect to independent claims, Cimochoowski fails to teach each and every element of Applicant's claim 25. The external coil antenna taught

⁶ Col. 16, ll. 1-9; FIG. 12.

⁷ Col. 16, ll. 1-9.

⁸ Col. 16, ll. 13-16.

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by Cimochowski is not an antenna for a medical device programmer comprising an antenna head, and means for attaching the antenna head to an item of clothing associated with a patient, where the means comprises a wide end and a channel that is disposed adjacent the wide end, is narrower than the wide end and is formed to hold the portion of the item of clothing, as recited by Applicant's claim 25.

In apparent recognition of the failure of Cimochowski to teach or suggest an antenna that defines an aperture comprising a wide end and a channel adjacent the wide end, where the channel is narrower than the wide end, as recited by Applicant's independent claims 1, 18, 25, 27, and 29, the Examiner cited Tiefengraber, Wallerstorfer, and Hagfors as teaching these elements of Applicant's independent claims. However, Tiefengraber, Wallerstorfer, and Hagfors each fail to teach or suggest an antenna that defines an aperture (or a means for attaching an antenna head to an item of clothing) comprising a wide end and a channel adjacent the wide end, where the channel is narrower than the wide end.

The Office Action found that FIG. 1 and column 3, lines 5-15 of Tiefengraber teach an antenna tag that includes an aperture comprising a wide end and a channel adjacent to the wide end formed to hold a portion of an item of clothing and hold the antenna in a substantially fixed position.⁹ However, FIG. 1 of Tiefengraber merely illustrates a circular aperture 15 for fastening an indicator/ski pass combination to clothing of a skier. Tiefengraber explicitly describes the aperture 15 as a ring.¹⁰ Again, a ring that defines a circular aperture cannot define an aperture that includes both a wide end and a channel that is narrower than the wide end disposed adjacent to each other, as required by Applicant's independent claims. Tiefengraber does not teach or suggest any other aperture configurations for fastening an indicator/ski pass combination to clothing of a skier.

Furthermore, Tiefengraber does not teach that the circular aperture 15 shown in FIG. 1 is formed to hold a portion of an item of clothing, much less an antenna that defines the circular aperture 15. While Tiefengraber discloses an antenna 7, the antenna is formed as a wire loop that extends around an edge of the indicator and ski pass device.¹¹ The antenna, which is not for a medical device programmer, does not define the aperture 15, as required by Applicant's

⁹ Final Office Action at page 3.

¹⁰ Col. 3, ll. 11-15.

¹¹ Tiefengraber at FIG. 1; col. 2, ll. 65-68.

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independent claims. The fact that Tiefengraber teaches an indicator device that includes an aperture 15 "which can be used . . . to fasten the indicator 1/ski pass 2 combination to the clothing of the skier"¹² does not in any way render Applicant's claims obvious. Applicant's independent claims are not intended to claim all apertures that are formed to couple in some way to clothing. Instead, Applicant's independent claims clearly recite an antenna for a medical device, where the antenna defines an aperture comprising a wide end and a channel adjacent the wide end, and where the channel is formed to hold a portion of an item of clothing. Tiefengraber, alone or in combination with Cimoehowski fails to teach or suggest such an antenna.

Hagfors also fails to teach an antenna that includes an aperture comprising a wide end and a channel adjacent to the wide end formed to hold a portion of an item of clothing and hold the antenna in a substantially fixed position. FIGS. 1 and 3 of Hagfors show a ring-shaped antenna 32. Again, a ring-shaped aperture cannot define an aperture that includes both a wide end and a channel that is narrower than the wide end disposed adjacent to each other, as required by Applicant's independent claims. Hagfors does not teach or suggest any other aperture configurations for fastening an antenna.

In addition to failing to disclose an antenna defining an aperture comprising a wide end and a channel adjacent the wide end, Hagfors does not discuss holding a portion of an item of clothing in an aperture or any other means for attaching an antenna head to clothing defined by an antenna, as required by Applicant's independent claims. In fact, Hagfors appears to teach away from an antenna that is configured to hold a portion of an item of clothing. Hagfors provides that, "in use, the transmitter antenna coil 32 is placed on the skin directly over the receiver 12 such that pulses of radio frequency energy are inductively coupled through the skin . . ."¹³

With respect to the Wallerstorfer reference, the Office Action found that FIG. 10 of Wallerstorfer, or alternatively, any of the fastening mechanisms in FIGS. 3, 6, 11, and 21, teach an antenna tag that includes an aperture comprising a wide end and a channel adjacent to the wide end formed to hold a portion of an item of clothing and hold the antenna in a substantially fixed position.¹⁴ While at first glance, FIG. 10 of Wallerstorfer may appear to illustrate an

¹² Col. 3, ll. 11-15.

¹³ Col. 4, ll. 19-23.

¹⁴ Final Office Action at page 3.

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aperture comprising a wide end and a channel adjacent to the wide end formed to hold a portion of an item of clothing, a closer look at Wallerstorfer indicates that Wallerstorfer, among other things, fails to disclose either an antenna that defines an aperture comprising the wide end and an adjacent channel, or an aperture that is formed to hold a portion of an item of clothing associated with a patient and thereby hold the antenna in a substantially fixed position relative to an implantable medical device.

Wallerstorfer merely describes fastening mechanisms for tags, where the tags could include an antenna. Wallerstorfer does not contemplate integration of the fastening mechanism with an antenna itself. In contrast, Applicant's independent claims recite an antenna with specific structure integrally formed with it to permit the antenna to hold an item of clothing and, thus, hold the antenna in a substantially fixed position relative to an implantable medical device. Applicant's independent claims do not recite an antenna and a separate fastener, as shown by Wallerstorfer. Moreover, Applicant does not necessarily agree that the fastening element 30 shown in FIG. 10 of Wallerstorfer illustrates an aperture comprising a wide end and a channel adjacent to the wide end formed to hold a portion of an item of clothing and hold an antenna in a substantially fixed position.

Wallerstorfer illustrates a fastening element 30 with a latch that enables the fastening element to be opened¹⁵, rather than antenna defining an aperture. Again, Applicant's independent claims are not intended to claim all apertures including a wide end and a narrower channel adjacent to the wide end. Applicant's independent claims specifically recite an antenna defining such an aperture. Nothing in Wallerstorfer discloses an antenna defining such an aperture. Wallerstorfer does not even disclose an antenna that includes structure integrally formed therewith to permit the antenna to hold an item of clothing.

The alternative figures of Wallerstorfer relied on by the Examiner as illustrating an antenna defining an aperture (FIGS. 3, 6, 11, and 21) also fail to show an antenna defining an aperture comprising a wide end and a narrower channel. FIGS. 3, 6, 11, and 21 each illustrate a circular aperture. As Applicant has previously stated, a circular aperture cannot define an aperture that includes both a wide end and a narrower channel disposed adjacent to each other, as required by Applicant's independent claims. Wallerstorfer does not teach or even suggest that

¹⁵ Col. 5, ll. 58 – col. 6, ll. 6; See also FIG. 16.

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the circular apertures are defined by an antenna. In fact, with respect to the fastening ring shown in FIG. 21, Wallerstorfer states that the fastening ring consists of plastic, and fails to mention that fastening ring may be an antenna.¹⁶ Accordingly, Wallerstorfer shows only a fastener and does not show an antenna defining an aperture including a wide end and an adjacent, narrower channel, as recited by Applicant's independent claims 1, 9, 18, 25, and 27-29.

It is also unclear why one skilled in the art would have even looked to Wallerstorfer or Tiefengraber to modify the external coil of Cimochowski to include define an aperture including a wide end and a narrower channel disposed adjacent to each other. Tiefengraber and Wallerstorfer do not even teach or suggest an antenna for a medical device programmer, as required by Applicant's independent claims.

To establish obviousness, the Examiner must identify an apparent reason why one of ordinary skill in the art would have been motivated to make a modification or combination to arrive at the claimed invention.¹⁷ An invention composed of several elements is not proved obvious merely by demonstrating that each of the elements was independently known.¹⁸ While the Examiner vaguely refers to Tiefengraber and Wallerstorfer as being in the "same problem solving area"¹⁹ as Applicant's invention, it is unclear on what reasoning the Examiner bases the "same problem solving" assertion or what the "problem solving area" encompasses. The Examiner's analysis of a reason to combine known elements must be more specific reasoning.²⁰

If the Examiner is implying that Tiefengraber and Wallerstorfer are in the same problem solving area as Applicant's claimed invention, Applicant respectfully disagrees. Applicant's invention is directed toward an antenna that permits relative stable positioning of the antenna relative to an implanted medical device.²¹ On the other hand, Tiefengraber is directed toward an indicator apparatus for recovery of skiers buried by avalanches²² and Wallerstorfer is directed toward a data carrier structure, such as for entry tickets.²³ It is unclear how Tiefengraber and Wallerstorfer are in the "same problem solving area" as Applicant's claimed invention.

¹⁶ Col. 7, ll. 36.

¹⁷ *KSR Int'l Co. v. Teleflex, Inc.*, No. 04-1350, Slip op. at 14. (April 30, 2007).

¹⁸ *Id.* at 14.

¹⁹ Final Office Action at page 3.

²⁰ *KSR*, Slip op. at 14.

²¹ Applicant's disclosure at paragraph [0096].

²² Abstract.

²³ Col. 3, ll. 64-67.

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If the Examiner is implying that Tiefengraber and Wallerstorfer are in the same problem solving area as Cimochoowski, Applicant respectfully disagrees. The teachings of Cimochoowski that the Examiner found relevant to Applicant's invention relate to an external coil that may be coupled to a radio frequency antenna via by encompassing a portion of a body near an implanted stent.²⁴ It is unclear how the indicator apparatus of Tiefengraber and the data carrier structure of Wallerstorfer solve any problem similar to the problem addressed by Cimochoowski.

It is also unclear why one of ordinary skill in the art would have been motivated to make a modification to Cimochoowski based on Wallerstorfer or Tiefengraber, or a combination to arrive at the claimed invention. The fact that Tiefengraber may teach a ring to fasten the indicator apparatus to clothing of a skier or that Wallerstorfer may disclose a fastening element for fixing a data carrier structure to clothing of a holder does not provide a motivation to combine the specific teachings of Tiefengraber and Wallerstorfer with Cimochoowski. As described above, however, even if Cimochoowski was combined with either Tiefengraber or Wallerstorfer (or Hagfors), the combination would not result in an antenna defining an aperture comprising a wide end and an adjacent, narrower channel. Nothing in Tiefengraber or Wallerstorfer even relate to a configuration of an antenna that defines an aperture, much less relate to antennas for medical devices. On the contrary, these references described fasteners without any mention of integrating such fasteners with an antenna.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 1-9 and 11-29 under 35 U.S.C. § 102(b)/103(a) based on Cimochoowski alone or Cimochoowski in view of Tiefengraber, in view of Wallerstorfer et al. or in view of Hagfors. Withdrawal of this rejection is requested.

Pool

In support of the rejection of claims 9, 11-23, 25, 26, 28, and 29 under 35 U.S.C. §§ 102(b)/103(a) based on Pool alone or Pool in view of Tiefengraber, Wallerstorfer et al. or Hagfors, the Office Action stated that Pool teaches an antenna housed within a belt, and that such a housing inherently possesses the ability to have clothing pulled through the channel created by buckling the belt, thereby holding the antenna in a substantially fixed position relative to the

²⁴ Office Action at pages 2-3.

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implanted device.²⁵ In addition, the Office Action stated that because the opening of the belt-like housing of the antenna can be defined as both a channel and an aperture, if the belt-like housing of the device were held vertically then rotated about its vertical axis, the channel/aperture of the device would appear to be much thinner than the channel/aperture of the coil that is not rotated.²⁶

Pool fails to teach each and every feature of Applicant's independent claims 9, 18, 28 and 29, as amended. For example, Pool fails to teach or suggest positioning an antenna that defines an aperture with a wide end and a channel disposed adjacent the wide end relative to an implantable medical device. Instead, Pool describes a wearable telemetry arrangement for communicating with an implantable medical device that includes an article to be physically coupled to and donned on a body and an antenna member located on the article.²⁷ For example, the Pool reference describes the wearable article as a buckled belt such that the antenna has a wide, open aperture capable of wrapping around a patient's waist.²⁸ The Office Action stated that the belt-like housing of the antenna defines both an aperture and a channel. However, an antenna that defines a circular aperture cannot define an aperture that includes both a wide end and a narrower channel disposed adjacent to each other.

The Pool reference does not describe pulling a portion of an item of clothing into a channel defined by the antenna to hold the antenna relative to an implantable medical device. Contrary to the assertion by the Office Action, buckling a belt in which the antenna described by Pool is disposed does not create a channel into which to pull a portion of an item of clothing to hold the antenna relative to the implantable medical device. Pool teaches an antenna being included in a wearable article with the ability to hold the antenna relative to the implantable medical device when a patient wears the article in which the antenna is disposed. Therefore, the antenna within the belt, as described by Pool, is positioned relative to an implantable medical device by buckling the belt around the patient's waist, not by pulling an item of clothing through the buckled belt, much less pulling clothing through an antenna that defines an aperture with a wide end and a channel disposed adjacent the wide end, as claimed. The interpretations of both

²⁵ Final Office Action at page 5.

²⁶ *Id.* at pages 5-6.

²⁷ Abstract.

²⁸ See col. 8, ll. 35-38.

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the features of claims 9, 18, 28 and 29 and the Pool reference by the Office Action are unreasonably broad.

The Examiner cited Tiefengraber, Wallerstorfer, and Hagfors as teaching "antenna tags wherein an aperture comprises a wide end and a channel adjacent to the wide end formed to hold a portion of an item of clothing and hold the antenna in a substantially fixed position."²⁹ However, as established above, neither Tiefengraber, Wallerstorfer, nor Hagfors teaches or suggests an antenna that defines an aperture comprising a wide end and a channel adjacent the wide end, where the channel is narrower than the wide end. Accordingly, even if Pool were combined with Tiefengraber, Wallerstorfer or Hagfors, Applicant's claims would not be rendered obvious.

For similar reasons discussed above with respect to the lack of motivation to combine Cimoichowski with Tiefengraber and Wallerstorfer, it is unclear why one skilled in the art would have combined the teachings of Tiefengraber and Wallerstorfer with Pool. Pool relates to a wearable telemetry arrangement for use with a medical information communications device³⁰, whereas Tiefengraber relates to an indicator apparatus for recovery of skiers buried by avalanches³¹ and Wallerstorfer is directed toward a data carrier structure.³² The fact that Tiefengraber may teach a ring to fasten the indicator apparatus to clothing of a skier or that Wallerstorfer may disclose a fastening element for fixing a data carrier structure to clothing of a holder does not provide a motivation to combine the specific teachings of Tiefengraber and Wallerstorfer with Pool in order to arrive at an antenna that defines an aperture comprising a wide end and an adjacent, narrower channel formed to hold a portion of an item of clothing.

It is impermissible for the Examiner to establish obviousness by demonstrating that each of the elements was independently known.³³ Other than the vague reference to the "same problems solving area," the Examiner has not identified an apparent reason why one of ordinary skill in the art would have been motivated to make a modification to Pool or to combine Pool with Tiefengraber and Wallerstorfer in order to arrive at Applicant's claimed invention.³⁴ Even if

²⁹ Final Office Action at page 7.

³⁰ Abstract.

³¹ Abstract.

³² Col. 3, ll. 64-67.

³³ *Id.* at 14.

³⁴ *KSR*, Slip op. at 14.

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Pool was combined with either Tiefengraber or Wallerstorfer (or Hagfors), the combination of references does not teach an antenna defining an aperture comprising a wide end and an adjacent, narrower channel.

Pool alone or in combination with Tiefengraber, Wallerstorfer or Hagfors fails to disclose each and every limitation set forth in claims 9, 11-23, 25, 26, 28, and 29. For at least these reasons, the Office Action has failed to establish a prima facie case for unpatentability of Applicant's claims 9, 11-23, 25, 26, 28, and 29 under 35 U.S.C. §§ 102(b) and 103(a). Withdrawal of this rejection is requested.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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By:

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